

only

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Pervasive Computing (PvC)

....and Its Impact on Next Generation Army Systems

Best Available Copy

Timothy A. Bailey
Enterprise IT Architect
USA TACOM
Tel: 586-574-6636
Fax: 586-574-6167
baileyt@tacom.army.mil



Agenda



- ❖ Pervasive Computing (PvC)
- ❖ PvC: It's Role in the Enterprise
- ❖ Convergence: A PvC Enabler
- ❖ Open Services Gateway Initiative (OSGi)
- ❖ Pervasive Device Software Architecture
- ❖ Back-End PvC Architecture
- ❖ Current Army Enterprise IT Architecture
- ❖ Middleware – A Foundation Upon Which to Build
- ❖ Enterprise IT – Its Impact on the Army

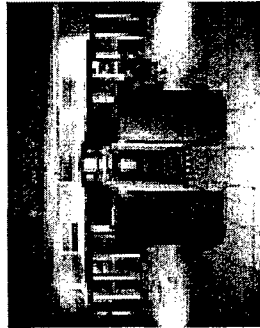


Pervasive Computing (PvC)

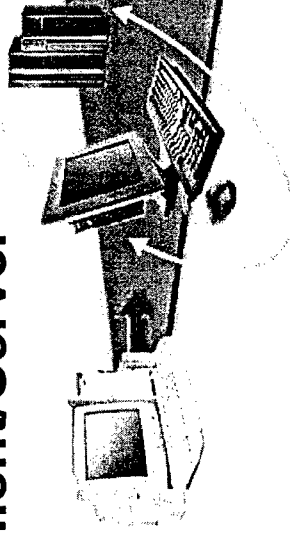


A Natural Progression...

Isolated
Mainframes

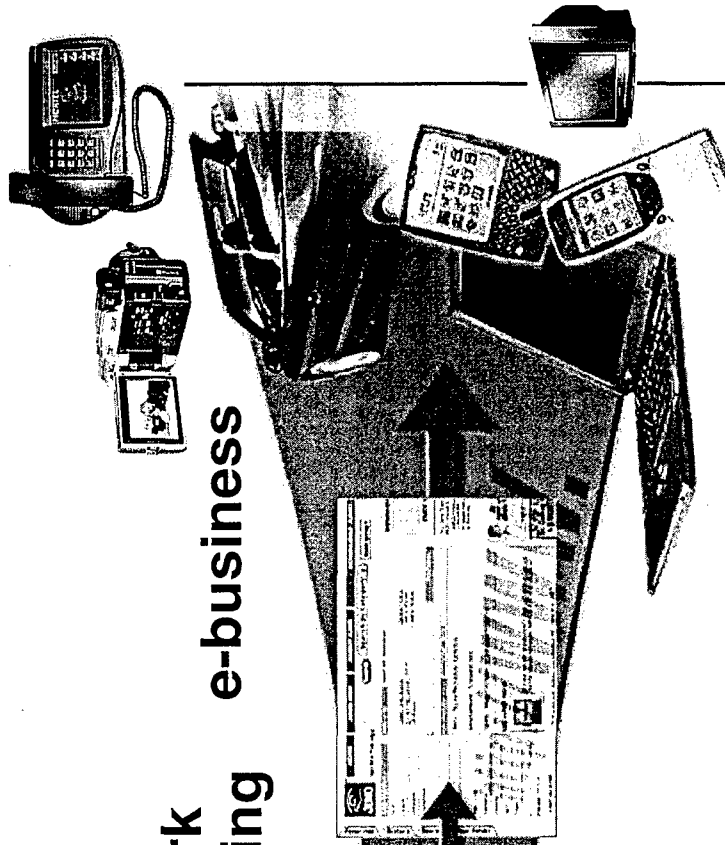


Client/Server



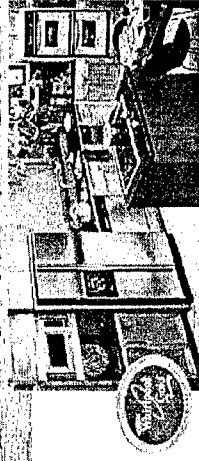
Network
Computing

e-business



**Enterprise IT is
Moving Outward to
Embrace a New Class
of Devices**

REFLECTIONS OF PERFECTION





Pervasive Computing is...

Convenient access,

through a new class of device,

to *relevant* cross-enterprise information

with the ability to *easily* take action on it
when and where required.



*"...a billion people interacting with a million
e-businesses with a trillion intelligent devices
interconnected ..." (L.V. Gerstner)*



What's an IDE*?

It's Enterprise Computing & E-Business!

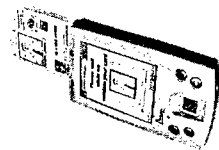
- ❖ Enterprise Middleware
 - ✓ Enterprise Application Integration (EAI)
 - ✓ Pervasive Computing (PvC),
 - ✓ Foundation for Net-Centric Application Development
- ❖ Business Process Integration/Management (BPI/M),
- ❖ Knowledge Management (KM),
- ❖ Enterprise Content Management (ECM)
- ❖ Supply Chain Management (SCM),
- ❖ Customer Relationship Management (CRM),
- ❖ Product Life-Cycle Management (PLM),
- ❖ Enterprise Resource Planning (ERP),
- ❖ Legacy Software, etc.

*: Integrated Data Environment



“Convergence:” Blurring of the Lines Between Products, Industries & Organizations

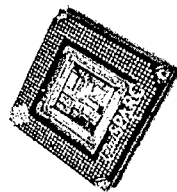
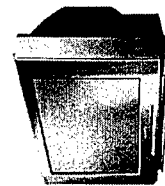
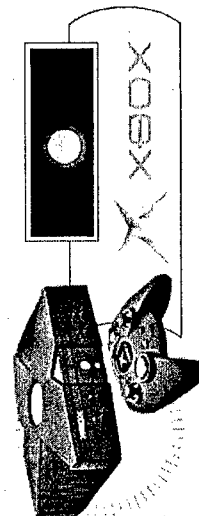
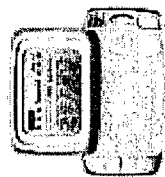
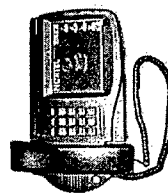
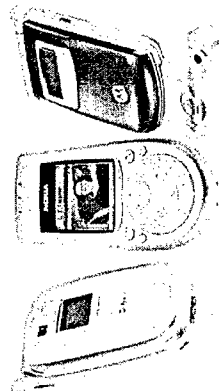
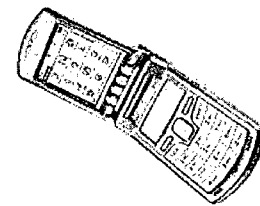
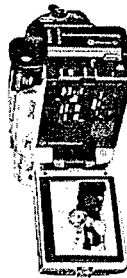
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❖ Standards, Technologies & Products are Crossing
Vertical Industries (IT, Telecom, CEs & CPs), &



❖ Creating a Seamless IT Infrastructure From the
Enterprise Down to Legions of Embedded Systems



2



Convergence...



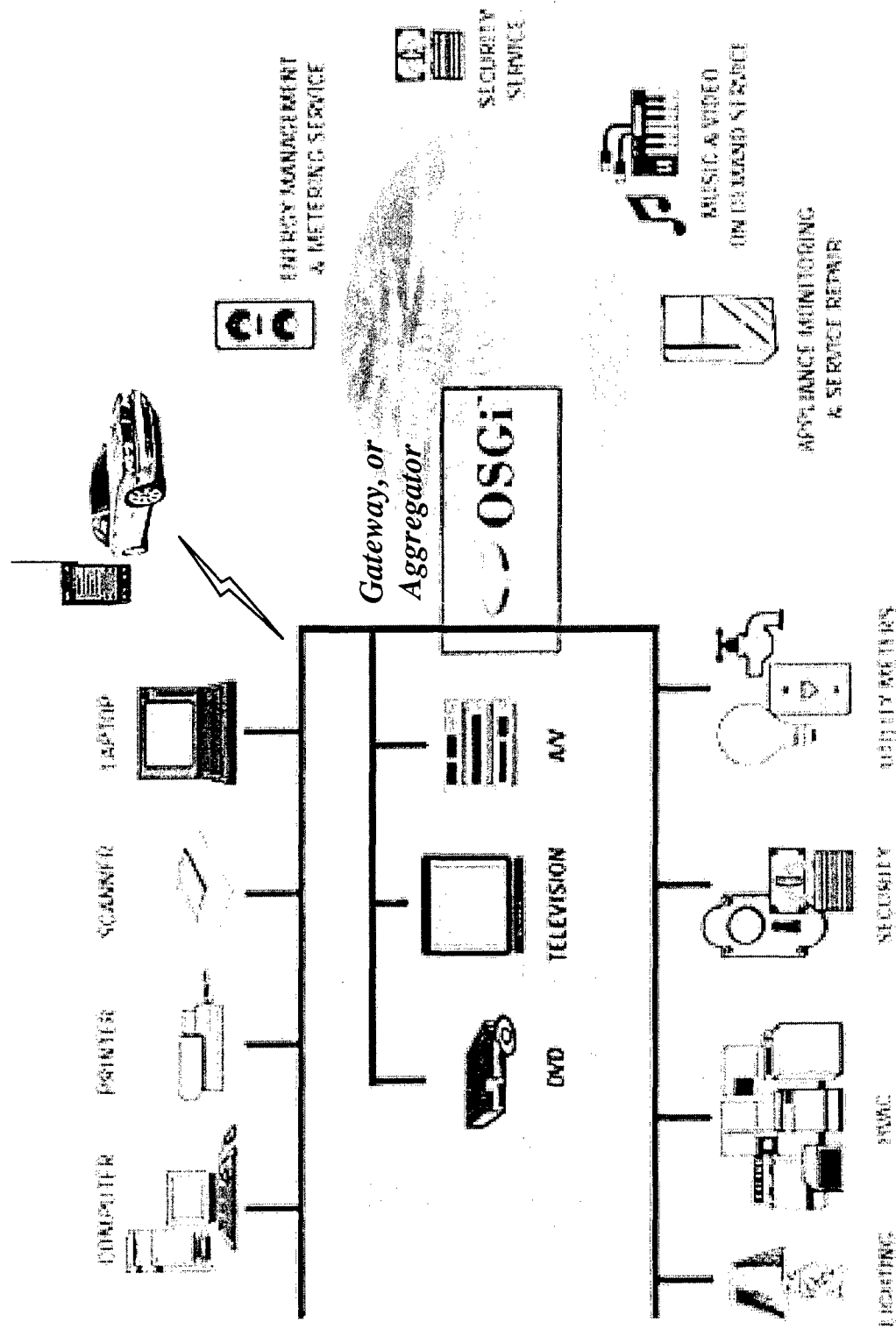
- ❖ Blurring the Lines between:
 - Devices (Hardware/Services)
 - Information (It's all reduced to IP Packets)
 - Applications (Software/Services)
 - Organizations (Forcing Reorganizations & Cooperation)
- ❖ Forcing Integration & the Seamless Flow of Information Between Processes & People

It's Changing the World



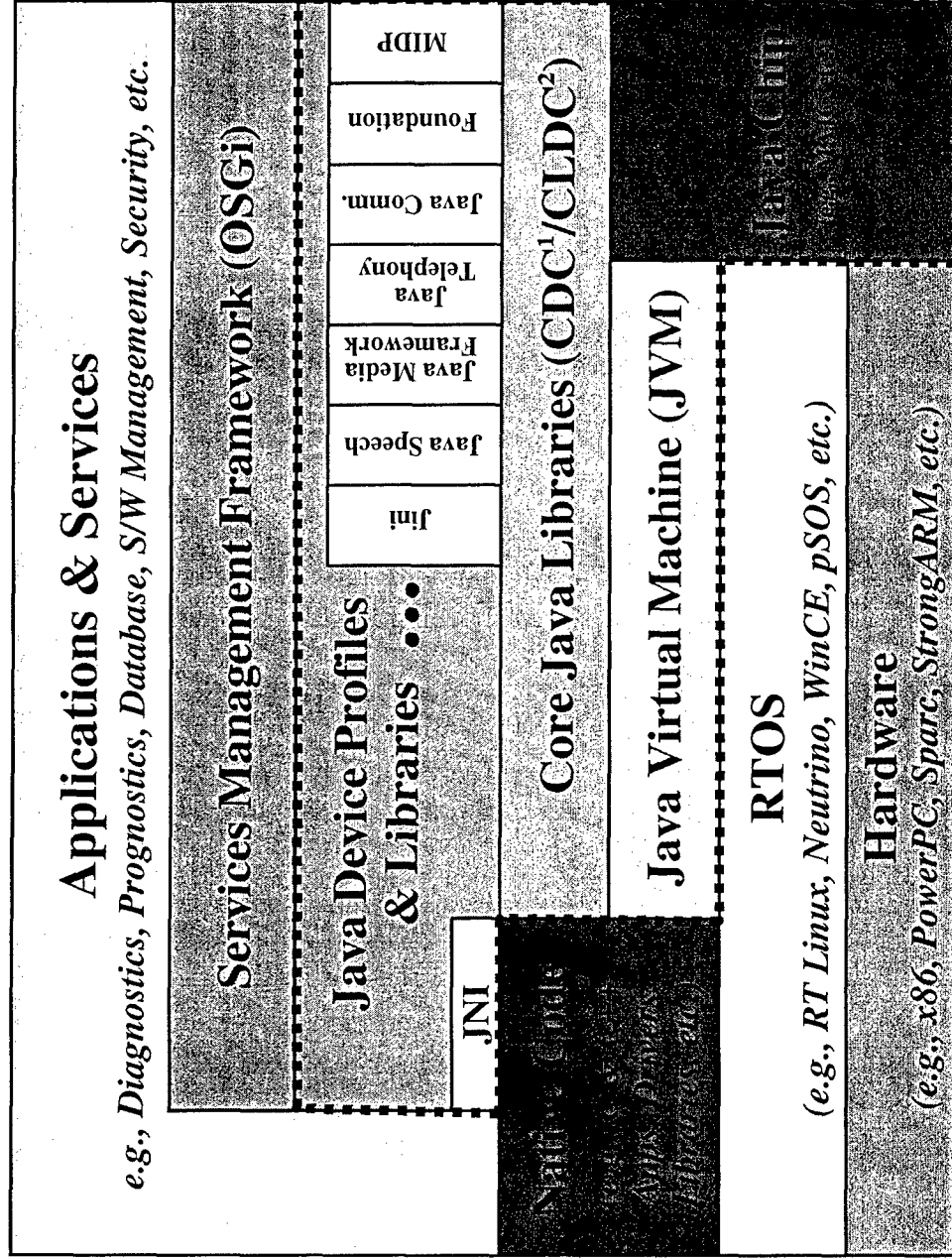
The Open Services Gateway Initiative (OSGi)

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Pervasive Device Software Architecture



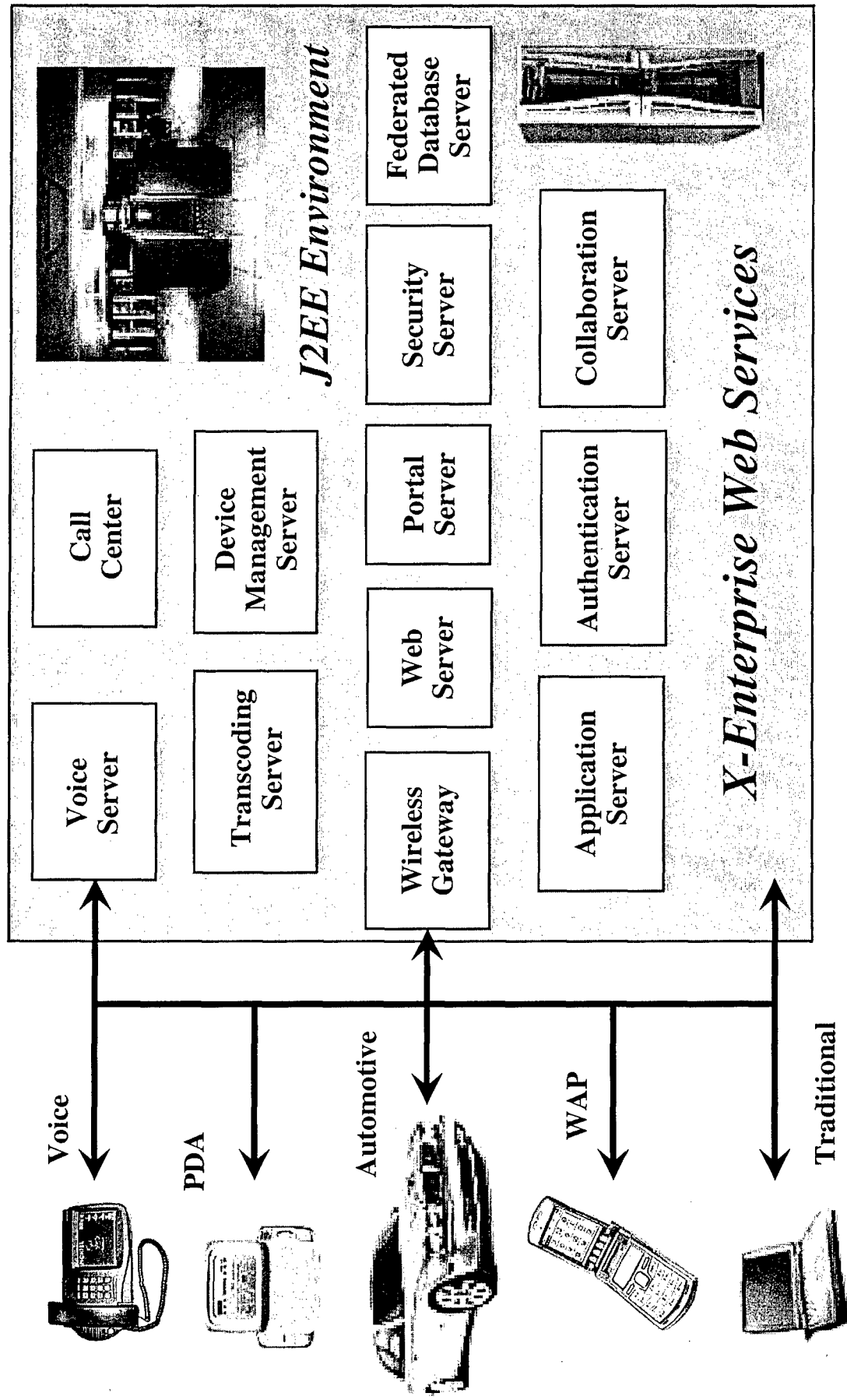
¹: CDC: Connected Device Configuration

²: CLDC: Connected Limited Device Configuration



Back-End PvC Architecture

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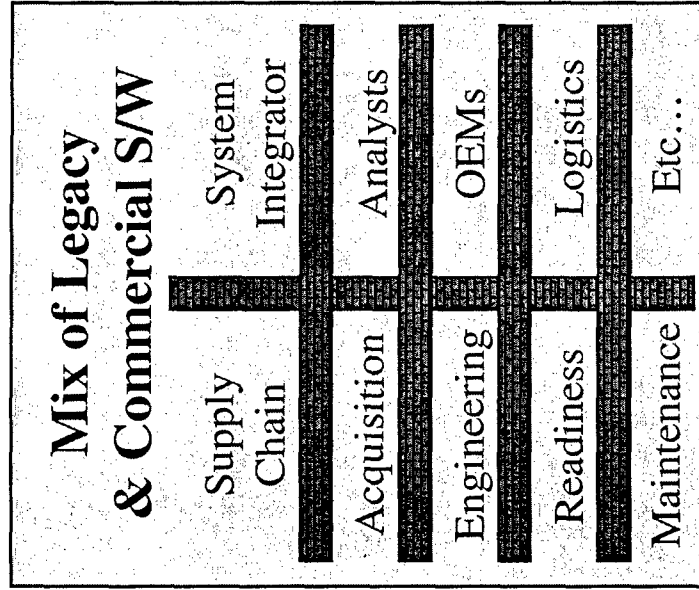




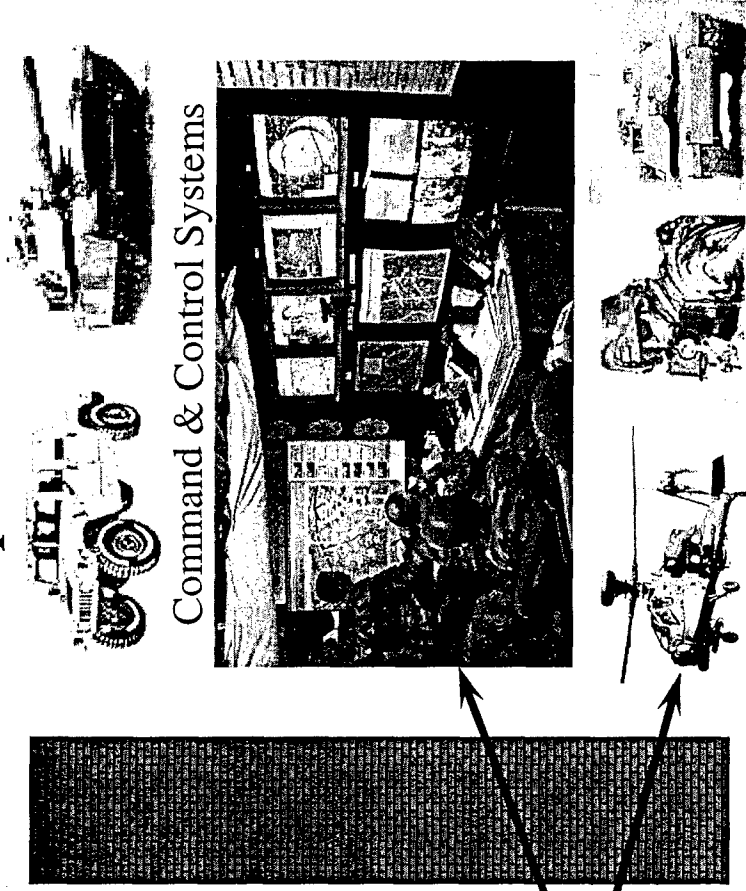
Current Army Enterprise IT Architecture



Enterprise Side



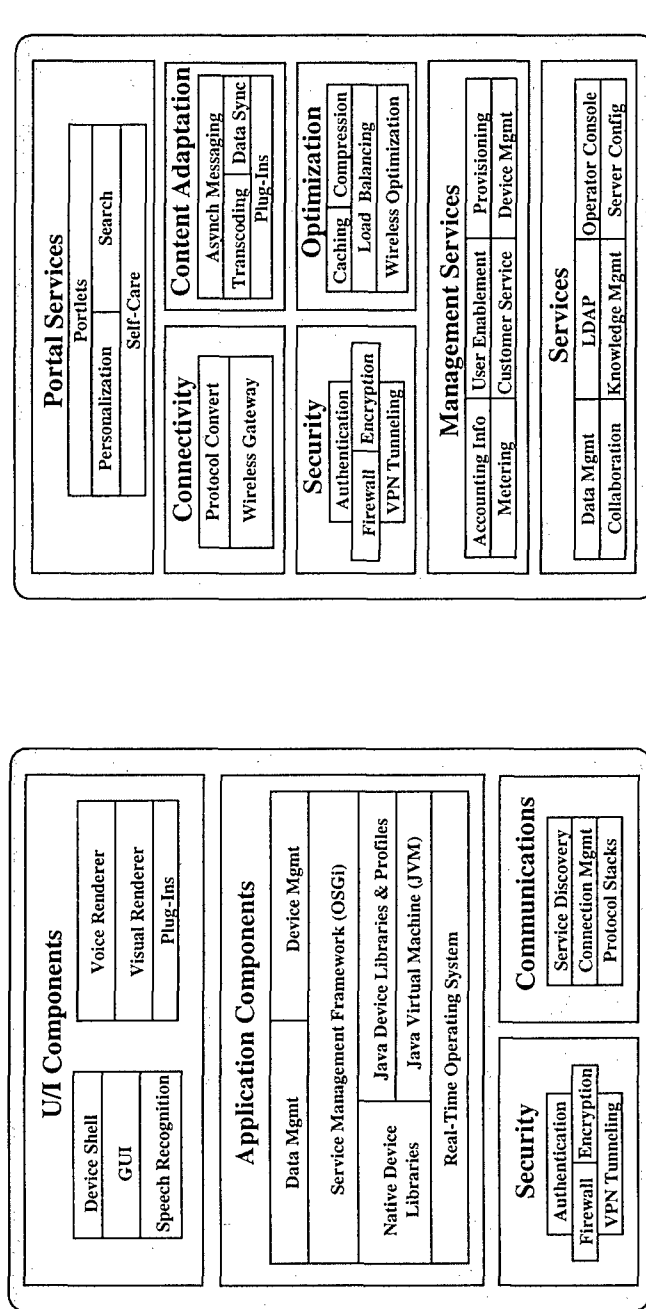
Operational Side



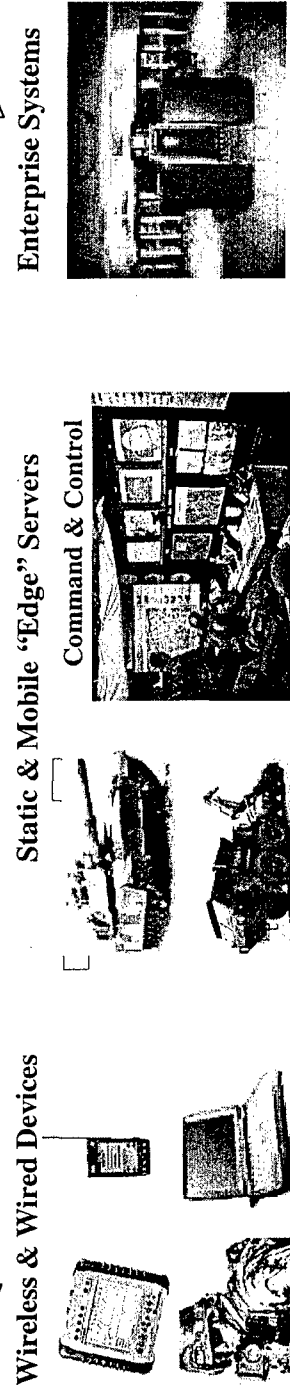
*Need a Single Commercially-Based
X-Enterprise IT Architecture*



Middleware: A Powerful Foundation Upon Which to Build!

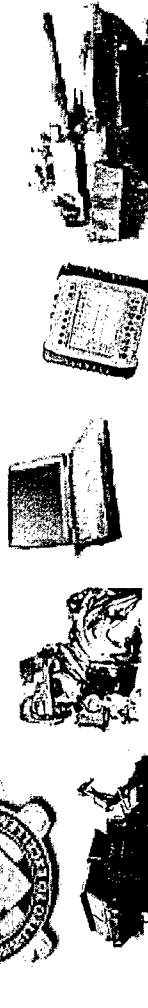


An Increasing Spectrum of Compute Platforms & Services

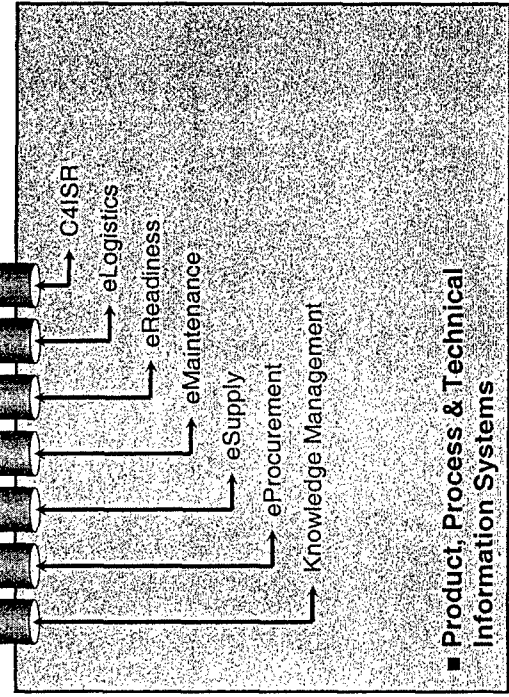
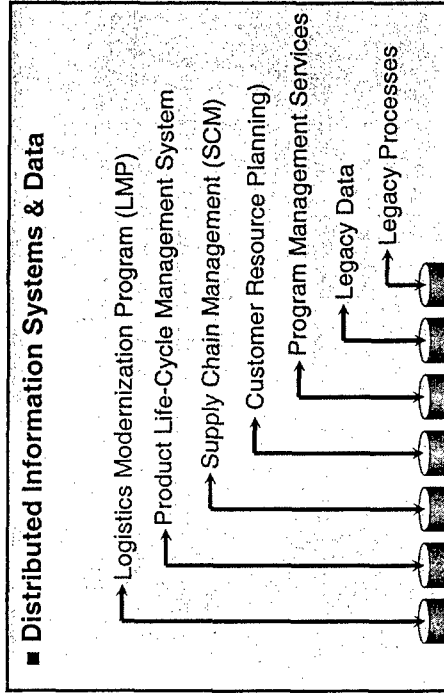
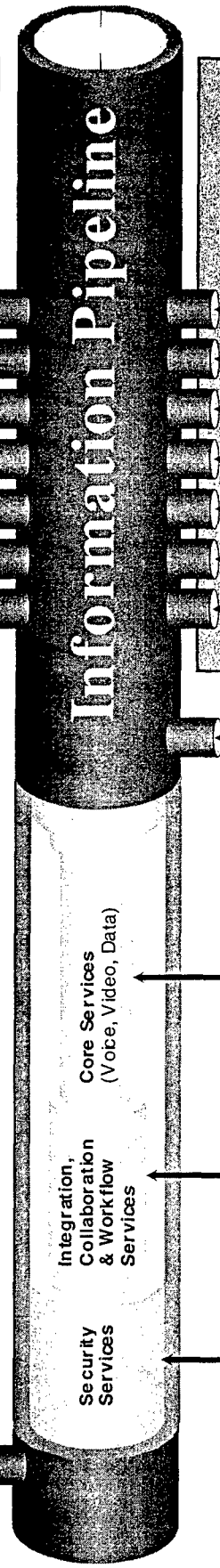




A Middleware Foundation



**Secure Access to
Support, Data,
Processes, Suppliers,
etc.**



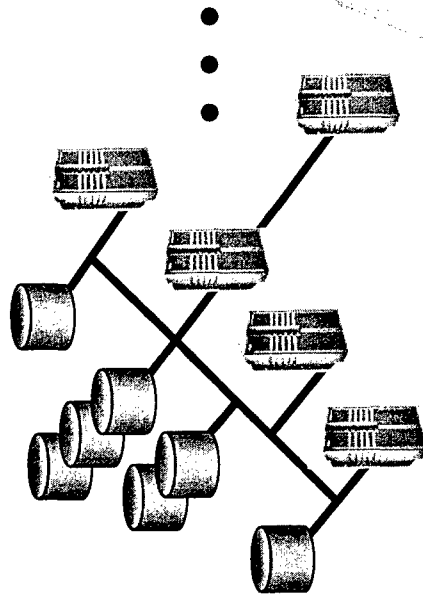
- Open Systems Architecture Provides**
- Foundation for Application Development & IDE Tools
 - Enterprise Application Integration Adaptors & Integration Tools
 - Common Communications Gateways (Non-IP Tunnels)
 - Distributed Process, Software and Data Management Services



Middleware Services

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Web Services Aggregators



- ❖ *eProcurement*
- ❖ *eLogistics*
- ❖ *eMaintenance*
- ❖ *eReadiness*
- ❖ *eSupply*
- ❖ *eC4ISR, etc.*

Enterprise Software Stack:

- ❖ Middleware Services (Portal, App, etc.),
- ❖ Message Queuing (TP),
- ❖ Network/Process Security & Management)
- ❖ Wireless Gateway (Transport Abstraction)
- ❖ Grid & Autonomic Computing
- ❖ Storage Area Networks (SANs)
- ❖ Web Services
- ❖ Linux

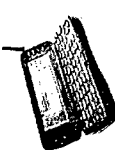
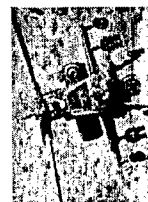
Internet/Intranet

Security/Authentication
Software Management
Data/Voice/Services

Any Client

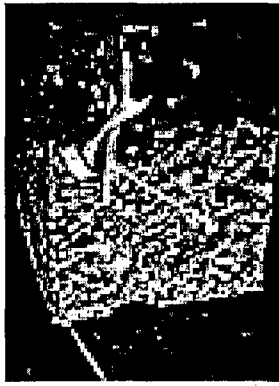
Client-Side Stack:

- ❖ Java (J2ME)
- ❖ JVM
- ❖ OSGi SMF
- ❖ DA (Proc Mngt)
- ❖ MQe
- ❖ DBe
- ❖ Voice
- ❖ RT Linux
- ❖ etc...





Enterprise IT



Like the Borg it will:

- ❖ Expand, Assimilate and Irrevocably Transform Information and Electronic Devices at all Levels and across all Army Organizations.

*Your Devices & Data Will be Assimilated....
Resistance is Futile!*

